Centre Number	Candidate Number

Candidate Name _____

International General Certificate of Secondary Education

UNIVERSITY OF CAMBRIDGE LOCAL EXAMINATIONS SYNDICATE

PHYSICS 0625/5

PAPER 5 Practical Test

ANSWER BOOKLET

Friday **28 MAY 1999** Morning 1 hour 15 minutes

TIME 1 hour 15 minutes

INSTRUCTIONS TO CANDIDATES

Write your name, Centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided on the answer booklet.

FOR EXAMINER'S USE	
1	
2	
3	
4	
TOTAL	

This answer booklet consists of 8 printed pages and 4 blank pages.

[Turn over

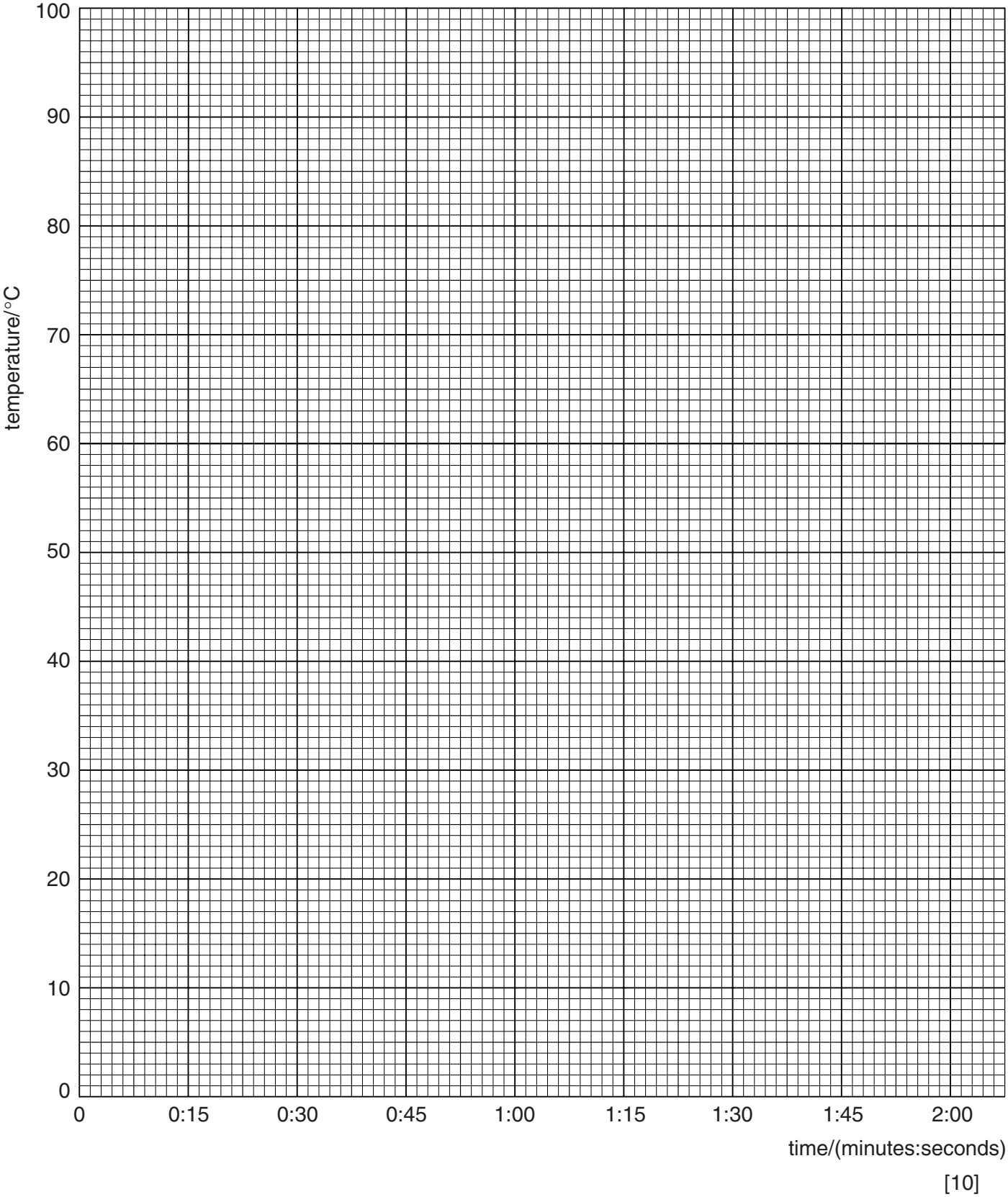
1 (a) **Table 1**

time t / (minutes:seconds)	temperature/°C
0:00	
0:15	
0:30	
0:45	
1:00	
1:15	
1:30	
1:45	
2:00	

[3]

(d) The increase in temperature per second (gradient) at time t = 1 minute.

[2]


100
90
80
70
60
50
40
30
20
10
0
temperature/°C
0
0:15
0:30
0:45
1:00
1:15
1:30
1:45
2:00
time/(minutes:seconds)

[10]

2 **(a)** Explain why it is not possible to measure l_0 accurately as the band hangs from the rod.

.....

.....

.....

l_{top} = ...

l_{bottom} = ...

l_0 = ...

Why did this procedure make it more convenient to measure l_0?

.....

.....

Why did the mass have to be small?

.....[6]

(b) Describe how you have used **one** of the items **(i)** or **(ii)** to improve the accuracy with which you can measure l_{bottom}.

.....

.....

.....[1]

mass/g	l_{bottom}	length/cm when masses were added	l_{bottom}	length/cm when masses were removed after three minutes
0		l_0 =		
100		l_1 =		l_1 =
200		l_2 =		l_2 =
300		l_3 =		l_3 =
400		l_4 =		l_4 =
500		l_5 =		l_5 =

[7]

(d) Use the data in columns 3 and 5 of the table to comment on how the length of the rubber band changes as the mass is increased.

.....

.....

.....[1]

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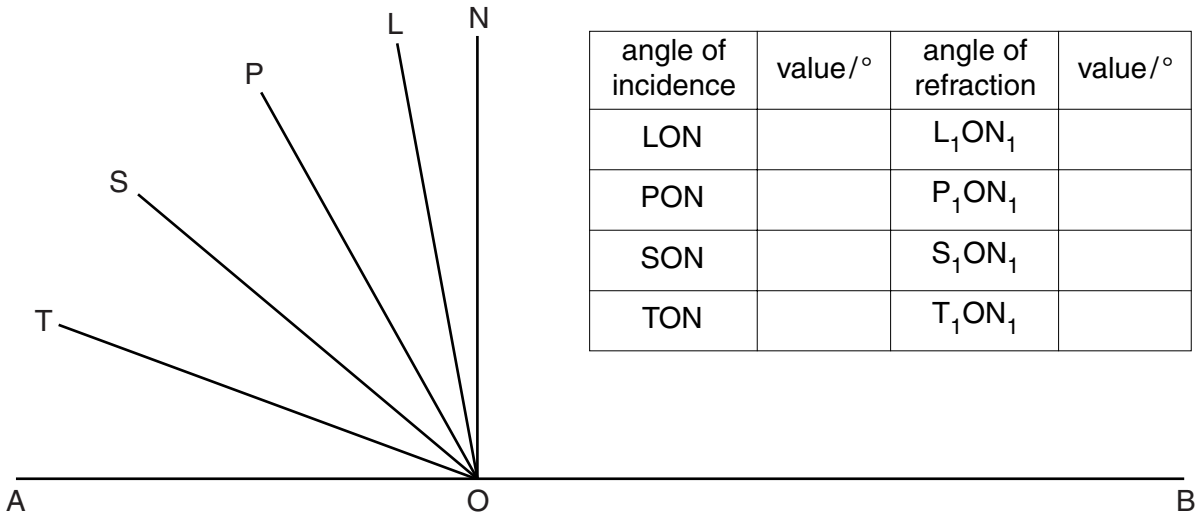
3 **(a)** AB = ... mm = ... metres [2]



angle of incidence	value/°	angle of refraction	value/°
LON		L_1ON_1	
PON		P_1ON_1	
SON		S_1ON_1	
TON		T_1ON_1	

[6]

[5]

(f) **(i)** The angles of refraction are

less than ☐

greater than ☐

the same as ☐

the angles of incidence.

(ii) The refracted ray is bent

towards the normal ☐

away from the normal ☐

not at all. ☐

[2]

4 **(a)** Largest volume that your measuring cylinder can measure ..... cm^3

Smallest volume that your measuring cylinder can measure ..... cm^3 [2]

(b) Volume of water poured into the measuring cylinder ..... cm^3 [1]

material	mass of block/g	total volume/ cm^3	volume of block/ cm^3
rubber			
metal			
wood			

[2]

(d) Use the formula below to calculate the density of the rubber.

$$\text{density} = \frac{\text{mass}}{\text{volume}} = \frac{\quad}{\quad} = \text{..... g/cm}^3$$ [1]

(e) calculation of the density of the metal

$$\text{density} = \frac{\text{mass}}{\text{volume}} = \frac{\quad}{\quad} = \text{..... g/cm}^3$$ [1]

(f) Why are you unable to calculate the volume of the wooden block?

.....

.....

.....[1]

(g) Total volume when the metal and wooden blocks are totally immersed in water.

.....[1]

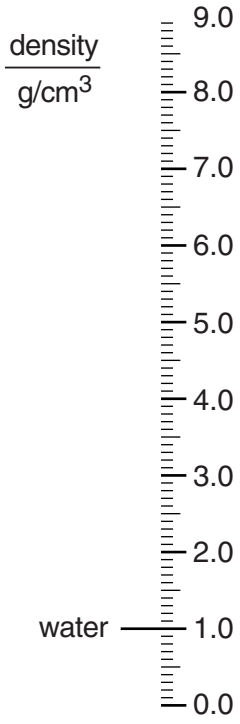
(h) calculation of the volume of the wooden block

calculation of the density of the wood

[2]

(i) Mark on the chart below the values of density you have obtained for rubber, metal and wood.

The density for water has been marked for you.



Use this information to explain why two of the blocks sank and the other block floated when placed in water.

.....

.....

.....[4]

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